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mortuary purposes. The decorations are in red paint and in incised lines. Of the minor articles of clay, spindle-whorls, displaying a variety of decorative designs, are most plentiful. There are also figurines of men and animals, stamps, and molds.

It is refreshing to have these preliminary glimpses into an untrodden archeological field, and the researches initiated by Heye and Saville are full of promise of additional interesting and valuable results. The problems of prehistoric South America and of the relation of the ancient peoples of that country to Central and North America, as well as to other adjacent land areas, are fraught with deep interest to all Americanists.

W. H. HOLMES.

*Archeological Researches on the Pacific Coast of Costa Rica.* By C. V. HARTMAN. Pittsburgh: Published by the Authority of the Board of Trustees of the Carnegie Institute. August, 1907. *Memoirs of the Carnegie Museum*, Vol. III, No. 1. 4°, 95 pp., 47 pl., 72 figs.

This is a valuable addition to the archeological literature of Central America, affording students the opportunity of becoming acquainted with a large number of rare and interesting works of art in stone and clay from a region heretofore barely touched by the scientific explorer. The work consists of introductory matter relating to the discovery and early history of the Nicoya peninsula and to archeological explorations made previous to the year 1897, followed by an account of the researches of the author with descriptions of his own collections and the rich material of the Velasco collection recently acquired by the Carnegie Museum, as well as of the great collections preserved in the National Museum of Costa Rica. The native peoples of the Nicoya region have been almost completely absorbed into the mixed Spanish population and have lost nearly all their primitive habits and customs as well as their language. The student of their history is thus limited in his resources almost exclusively to the study of their burial places and the objects of art obtained therefrom.

The burial ground of Las Guacas, in which the author conducted his principal researches, is situated near the pueblo of Nicoya on the peninsula of Nicoya in western Costa Rica, and was entirely covered with forests when the first settlers took possession of the site about 1877. There were no indications above the ground of the treasures hidden below. The numerous pieces of broken pottery and the metates met with close to the surface proved nothing, as similar finds are common in these regions near ancient settlements and do not necessarily indicate burials. The entire burying ground does not seem to have included more than a



FIG. 36. — Examples of the elaborately carved metates of Costa Rica.

few acres, but it is described as varying much in depth, containing, especially in the central part, two or more burials one above another. The burials were in pits excavated in a layer of conglomerate which is overlaid with deposits of humus and clay. The human remains had been buried not as bodies are buried today, but the bones of one or more individuals had been gathered in heaps or bunches and cast into the pit along with various objects of art.

The author's descriptions of the several classes of objects are full and clear, and his large series of illustrations is most admirable. The identification of the numerous varieties of stone used seems, for certain parts of the collections, to have been very carefully attended to — a matter of much difficulty, however, for the reason that precious specimens cannot be submitted freely to the tests of the mineralogist. Of first importance among the many artifacts obtained from these graves are the elaborately sculptured metates or mealing plates in the manufacture of which the ancient people must have expended a large share of time and energy. Upward of fifty specimens were taken out by the author during his explorations of a small remnant of the cemetery of Las Guacas, and it is estimated that at least two thousand examples have been at one time or another collected from the site. Hewn from large blocks of lava, they served during the lifetime of the owners and were cast into their graves in order that they might not suffer for want of food in the spirit world, or as simple offerings. They are elaborate works of art requiring great skill and patience in their manufacture, and are remarkable for their graceful lines and their artistic and often elegant ornamentation. The numerous forms embodied and the sculptured designs were doubtless symbolic and related to deities believed to preside over the functions of the utensil, which was, more intimately than any other, connected with the food supply of the people.

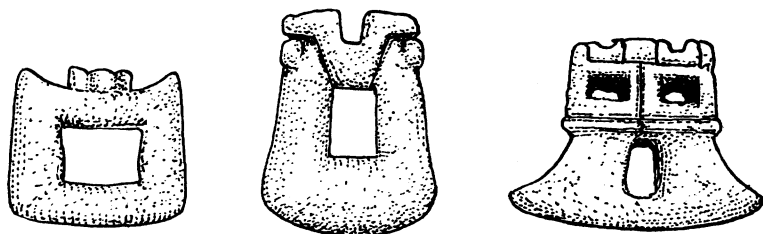


FIG. 37. — Handstones or mullers used with the metate plates of the Costa Ricans.

The number of hand-stones, mullers, and pestles obtained from the graves was not so great as might be expected considering the great number of grinding plates. They appear to be of three principal varieties :

the small sub-rectangular flattish forms, plain or with humps to fit the hands; the long cylindrical forms, the ends of which project beyond the margin of the plate for convenience in holding, and the remarkable stirrup-shaped variety found but rarely in other parts of America. Minor objects of stone are numerous and interesting. Chipped implements are comparatively rare and include only a few two-bladed axes of unique shape,

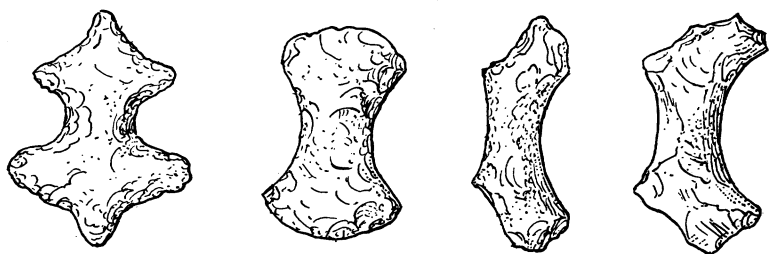


FIG. 38. — Chipped slate axes of the ancient Costa Ricans.

and a single arrowpoint. Objects of polished stone are exceedingly plentiful. Many are implements, as celt heads and hammers, but the larger number are amulets or ornaments. Celts of ordinary form, mostly oval or round in section, are numerous and were evidently the principal stone implement of the Nicoyans. They are usually made of fine-grained green stone and are highly polished, save in cases where the upper end was left rough for insertion into the haft. A number of channeled bark scrapers or beaters are seen in the collection, and mace heads are remarkably numerous. The latter are perforated for hafting and are shaped to represent life forms in great variety. All are small and must have been



FIG. 39. — Mace heads of the ancient Costa Ricans.

employed in ceremonial uses rather than as club heads for actual warfare. Many specimens bear evidence of the use of the hollow cylindrical drill in their manufacture. At no other locality has such a large number of implements of this general class been found. They are classified as human heads, mammal heads, heads of birds, birds, two-legged monsters, alligators, and clubs without animal characters.

Polishing stones, usually pebbles of more or less translucent agate, are numerous. There are also whetstones, grindstones, cutting tools, and cores, the latter displaying the scars due to removal of portions by sawing and breaking.

The Nicoyan lapidaries were very skilful in carving all varieties of stone, and many examples of their work are described and illustrated. Although it is impossible to draw any definite line between those objects which had significance as amulets and those which were ornaments, pure and simple, the author is doubtless correct in referring to them in general as amulets. They are of small size and are usually perforated, notched, or grooved for convenience in attachment to the person or to some part of the costume. They are classified as celt-shaped objects, figurines sculptured in the round, tubes, beads, and objects without animal characters.

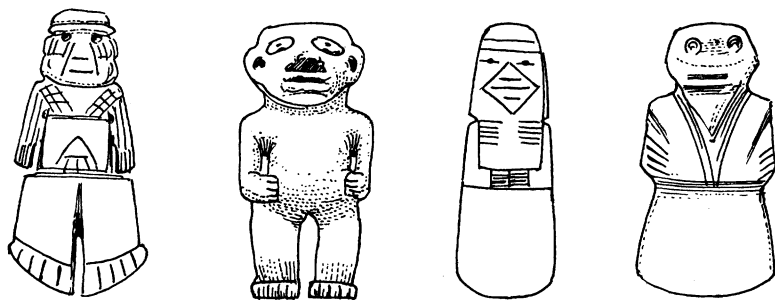


FIG. 45. — Amulets of the ancient Costa Ricans.

According to the author the Las Guacas burial ground has yielded more objects of jade than all other sites in southern Central America combined. The materials of the Carnegie Museum collection have as yet, however, not been fully identified. Professor Brown of the University of Pennsylvania, who has made a study of the Velasco collection, considers it to contain probably the best assemblage of worked American jade in existence.

Notwithstanding the frequency of the occurrence of jade on the Nicoyan peninsula no indication of the source of supply has yet been discovered. However, the fact that so much of this material has been found and that numerous blocks of the crude or partially worked stone are present, indicates the probability that the source of the raw material is near at hand.

Objects of clay are not numerous, the locality differing in this respect from most of the culture centers of middle America. A few small vessels,

some ocarinas or whistles, and numerous small figurines comprise the list. The surface of the ware displays the natural color of the clay or is painted red, and the decorations, which are always simple, appear to be in the main incised. Larger vessels, probably used for domestic purposes, were found by the early explorers, but nearly all when found were in a crushed or fragmentary state and were not preserved.

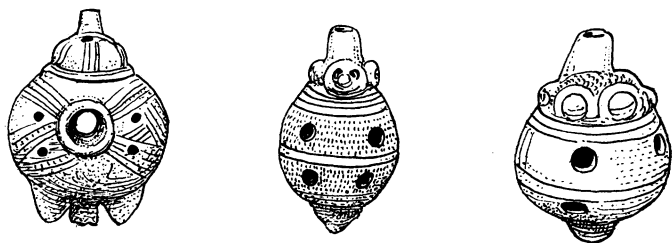


FIG. 41. — Ocarinas or whistles of the ancient Costa Ricans.

In concluding the author defines the limits of the Nicoyan culture as probably not extending beyond the peninsula, the islands in the Gulf, and limited areas on the neighboring mainland. The art of the region is in many respects different from that of the neighboring provinces, while occasional features remind us of the art of the Chiriqui and other more distant sections.

It is to be regretted that a map of Costa Rica indicating clearly the sites referred to is not included in the volume. On the whole, however, the Carnegie Museum is to be congratulated on the publication of this excellent memoir, and students of archeology will anticipate with much pleasure the appearance of other promised volumes of the series dealing with kindred subjects.

W. H. HOLMES.

*Publications of the Department of Anthropology of the University of California.*

The history and status of this Department have been the subject of a special report issued by it in 1905, to which the reader is referred for fuller information. Regarding the establishment of the Department this pamphlet gives the following information :

“The Department of Anthropology was constituted by the Regents of the University of California, September 10, 1901, as the outcome of numerous archæological and kindred researches carried on for the University of California for some time previous through the generosity of Mrs Phoebe A. Hearst. These investigations were of such importance and